

CLAIMS:

1. A ski or snowboard having a lower running surface and comprising:

means for attaching a boot to the ski or snowboard;

a deformable lubricant reservoir; and

means for conveying lubricant from the reservoir to the running surface,

the arrangement being such that, in use, an attached boot can exert pressure on the reservoir to deform the reservoir and drive lubricant from the reservoir, via the conveying means, to the running surface.
2. A ski or snowboard in accordance with claim 1, wherein the reservoir is resilient.
3. A ski or snowboard in accordance with claim 1 or claim 2 wherein the reservoir is semi-rigid.
4. A ski or snowboard in accordance with any preceding claim, wherein the reservoir is substantially rigid.
5. A ski or snowboard in accordance with any preceding claim, comprising a non-return valve through which lubricant flows from the reservoir to the running surface.
6. A ski or snowboard in accordance with any preceding claim, comprising a non-return valve arranged to permit air to enter the reservoir.
7. A ski or snowboard in accordance with any preceding claim, wherein the reservoir comprises a lubricant outlet through which lubricant is driven to the running surface, the reservoir extends along a length of the ski or snowboard forward from a first position to a second position, and the outlet is arranged proximate the second position.
8. A ski or snowboard in accordance with any preceding claim, wherein the means for conveying lubricant is arranged to convey lubricant from the reservoir to a plurality of positions on the running surface.

9 A ski or snowboard in accordance with claim 8, wherein the means for conveying is arranged to convey lubricant to said plurality of positions from a single outlet of the reservoir.

10. A ski or snowboard in accordance with any preceding claim, wherein the means for conveying comprises at least one conduit extending at least partially through the ski or snowboard towards the lower running surface.

11. A ski or snowboard in accordance with claim 10, wherein said conduit extends from an upper surface of the ski or snowboard towards the running surface.

12. A ski or snowboard in accordance with claim 11, wherein said conduit extends from the upper surface to a porous member, the porous member having an outer surface which forms part of the running surface.

13. A ski or snowboard in accordance with claim 11, wherein said conduit extends from the upper surface to the running surface.

14. A ski or snowboard in accordance with any one of claims 10 to 13, wherein the conduit comprises a plurality of micro channels.

15. A ski or snowboard in accordance with any preceding claim, wherein the means for conveying comprises at least one plate attached to an upper surface of the ski or snowboard, the plate having an inlet arranged to receive lubricant from the reservoir and defining a plate conduit arranged to convey lubricant from the plate inlet over the upper surface.

16. A ski or snowboard in accordance with claim 15, wherein the means for conveying comprises a plurality of conduits each extending from different respective positions on the upper surface, through the ski or snowboard towards the running surface, and the plate conduit is arranged to convey lubricant to said plurality of conduits.

17. A ski or snowboard in accordance with claim 16, wherein said plurality of positions comprises positions spaced apart along a length of the ski or snowboard.

18. A ski or snowboard in accordance with claim 16 or claim 17, wherein said plurality of positions comprises positions spaced apart across a width of the ski or snowboard.
19. A ski or snowboard in accordance with any one of claims 15 to 18, wherein the plate conduit comprises at least one channel in a lower surface of the plate, the plate lower surface being attached to an upper surface of the ski or snowboard.
20. A ski or snowboard in accordance with any one of claims 15 to 19, wherein the reservoir is attached to an upper surface of the plate.
21. A ski or snowboard in accordance with any one of claims 15 to 19, wherein the reservoir is attached to an upper surface of the ski or snowboard.
22. A ski or snowboard in accordance with any preceding claim, further comprising at least one porous member having an outer surface and an opposing surface, the porous member being arranged such that its outer surface forms part of the running surface and the means for conveying delivers lubricant from the reservoir to the opposing surface such that lubricant can pass through the porous member to the running surface.
23. A ski or snowboard in accordance with claim 22, comprising a plurality of said porous members.
24. A ski or snowboard in accordance with claim 22 or claim 23 wherein the or each porous member comprises a porous membrane.
25. A ski or snowboard in accordance with any one of claims 22 to 24 wherein the or each porous member is mesoporous.
26. A ski or snowboard in accordance with any preceding claim wherein the reservoir is arranged above a body of the ski or snowboard.
27. A ski or snowboard in accordance with claim 26 wherein the means for conveying is arranged to convey lubricant down through the ski or snowboard body to the running surface.

28. A ski or snowboard in accordance with any one of claims 1 to 27 comprising a race plate and wherein the reservoir is attached to an upper surface of the race plate.

29. A ski or snowboard in accordance with any one of claims 1 to 27 comprising a race plate, and wherein the reservoir is housed inside the race plate.

30. A ski or snowboard in accordance with any preceding claim, wherein the means for attaching comprises a toe binding and the reservoir is arranged beneath the toe binding.

31. A ski or snowboard in accordance with claim 30, wherein the toe binding is attached to an upper surface of the reservoir.

32. A ski or snowboard in accordance with claim 30 or claim 31, wherein the means for attaching further comprises a heel binding, rigidly attached to the ski or snowboard body, with no deformable reservoir beneath the heel binding, whereby the driving of lubricant to the running surface is achieved solely by means of pressure applied via the toe binding.

33. A ski or snowboard in accordance with claim 30 or claim 31, wherein the means for attaching comprises a heel binding, the ski or snowboard comprising a second said deformable lubricant reservoir arranged beneath the heel binding, the means for conveying being adapted to convey lubricant from each reservoir to the running surface.

34. A ski or snowboard in accordance with any preceding claim, wherein the deformable lubricant reservoir comprises a reservoir body and a flexible reservoir lid.

35. A ski or snowboard in accordance with claim 34, wherein the deformable lubricant reservoir further comprises a gasket arranged to form a seal between the reservoir body and lid.

36. A ski or snowboard in accordance with claim 35, wherein the gasket comprises self-sealing elastomeric material and is further arranged to seal a lubricant refill inlet to the reservoir.

37. A ski or snowboard in accordance with any preceding claim, wherein the means for conveying lubricant comprises a lubricant distribution system arranged inside a body of the ski or snowboard.

38. A ski or snowboard having a lower running surface and comprising at least one porous member, the porous member having a lower outer surface, which forms part of the running surface, and an opposing upper surface, the ski or snowboard further comprising means for conveying lubricant to the opposing upper surface such that lubricant may pass through the porous member to the running surface.

39. A ski or snowboard in accordance with claim 38 wherein the porous member is embedded in a body of the ski or snowboard such that the opposing upper surface is located inside the body.

40. A ski or snowboard in accordance with claim 39 wherein the means for conveying lubricant comprises at least one conduit extending down through the body to the opposing upper surface.

41. A ski or snowboard in accordance with any one of claims 38 to 40, further comprising a lubricant reservoir adapted to feed the means for conveying.

42. A ski or snowboard in accordance with claim 41, further comprising pumping means for pumping lubricant from the reservoir to the porous member.

43. A ski or snowboard in accordance with claim 42, further comprising means for attaching a boot, and wherein the reservoir is adapted to deform under pressure from an attached boot to drive lubricant to the porous member.

44. A ski or snowboard in accordance with claim 43, wherein the pumping means further comprises a first non-return valve arranged in a lubricant flow path from the reservoir to the porous member, and a second non-return valve arranged to permit air to be drawn into the reservoir.

45. A ski or snowboard in accordance with any one of claims 38 to 44, wherein the porous member comprises a porous membrane.

46. A ski or snowboard in accordance with claim 45, wherein the porous membrane comprises mesoporous material.

47. A ski or snowboard in accordance with claim 45 or 46, comprising a lower polymer layer, the porous membrane being located in a window in the lower polymer layer.

48. A ski or snowboard in accordance with any one of claims 38 to 47 and comprising a plurality of said porous members, the lower outer surfaces being distributed over the lower running surface.

49. A method of lubricating a running surface of a ski or snowboard, the method comprising the steps of:

providing the ski or snowboard with a boot binding and a deformable lubricant reservoir beneath the boot binding;

before using the ski or snowboard, filling the reservoir with a quantity of lubricant;

attaching a boot to the ski or snowboard using the binding;

using the ski or snowboard and exerting a pressure on the reservoir whilst using the ski or snowboard to deform the reservoir and progressively drive said quantity of lubricant from the reservoir;

whilst using the ski or snowboard, admitting air to the reservoir to replace expelled lubricant; and

conveying expelled lubricant from the reservoir to the running surface of the ski or snowboard, whereby the quantity of lubricant is progressively delivered to the running surface during use.

50. A method in accordance with claim 49, wherein the step of conveying comprises conveying the lubricant down through a body of the ski or snowboard.